

1 We claim:

2
3 1. An improved golf club fitting system for fitting a set
4 of golf clubs to a player comprising the steps:

5
6 measuring a player's physical dimensions at least including grip
7 strength of the player's hand;

8
9 selecting a representative golf club having a dead weight equal
10 to the total weight of the representative golf club, said
11 dead weight being directly proportional to the player's grip
12 strength, specifically that the dead weight of the golf club
13 is greater when the player's grip strength is greater and
14 vice versa;

15
16 recording the club length of the representative golf club;

17
18 determining the swing weight of the representative golf club;

19
20 computing a balance index (BI) for the representative golf club
21 by dividing the dead weight (DW) by the numerical value of
22 the swing weight (SW) ($DW/SW = BI$); and

23
24 comparing said balance index (BI) determined for the
25 representative golf club to said dead weight of the
26 representative golf club to determine generally corresponding
27 balance index and dead weight values for at least some of the
28 other golf clubs in a set of golf clubs such that the system

1 user can generally match different iron and wood golf clubs
2 to the representative golf club thereby creating a generally
3 ideal matched set of golf clubs for the player.
4

5 **2.** The improved golf club fitting system of claim 1 further
6 comprising the step of conducting a player profile interview with
7 a player to collect player information at least including physical
8 limitations, right/left hand player, current playing ability,
9 player's interpretation of their game and the player's goals for
10 their game and the fitting session;
11

12 **3.** The improved golf club fitting system of claim 1 wherein
13 said step of measuring a player's physical dimensions further
14 comprises measuring at least the player's middle finger length,
15 palm-to-wrist crease length, grip strength, player's height,
16 ground to palm distance and ground to knuckle of player's longest
17 finger.
18

19 **4.** The improved golf club fitting system of claim 1 further
20 comprising the steps of determining a player's current equipment
21 and the player's likes/dislikes on club aesthetics and feel,
22 selecting a current favorite golf club via player inquiry,
23 recording the club length, shaft frequency, dead weight of club,
24 swing weight of club and the corresponding shaft flex of the
25 current favorite club and comparing the recorded data of said
26 current favorite club with said representative golf club to
27 identify and assist the user in selecting the correct club set for
28 the player and further to act as a guideline for narrowing of

1 scope of acceptable club choices for the player.

2
3 **5.** The improved golf club fitting system of claim **1** further
4 comprising the step of determining the preferred club head and
5 club shaft configuration for the player at least factoring
6 recommended shaft length taken from applicable fitting chart,
7 shaft material options available, adjustments due to player
8 flexibility, swing tempo, and shaft loading effects and additional
9 grip weight due to size recommendations.

10
11 **5.** The improved golf club fitting system of claim **1** wherein
12 said step of selecting a representative golf club comprises
13 selecting a test golf club having a determined dead weight, swing
14 weight and balance, said determined dead weight, swing weight and
15 balance calculated via said determining step, said test golf club
16 having a club head including adjustable weighting means and
17 adjustable weight positioning means, said test golf club further
18 having shaft length adjustment means such that the weight and
19 balance of said club head of said test golf club and the length
20 of said shaft of said test golf club are adjustable to fit the
21 player's determined swing characteristics.

22
23 **6.** The improved golf club fitting system of claim **5** further
24 comprising using said test golf club and designated fitting charts
25 to determine the appropriate selection of a set of golf clubs for
26 the player which will best fit the player's playing
27 characteristics.

1 7. The improved golf club fitting system of claim 5 wherein
2 the shaft length and the head weight of said test golf club is
3 adjustable via a plurality of shaft extensions which are designed
4 to releasably connect to the top end of the test golf club and are
5 made in a series of progressively lengthened units such as the
6 one-inch extension and the one and one-half inch extension, said
7 head weights adapted to be releasably mounted into the club head
8 of the test golf club, said head weights being in progressively
9 heavier units such as the ¼ ounce weight and the ½ ounce weight
10 such that the precise weight and shaft length for said test golf
11 club can be set so that the player and fitter can determine the
12 best fitting club for the player and use the resulting figures to
13 fit the rest of the desired set.

14
15 8. The improved golf club fitting system of claim 1 further
16 comprising the step of providing an adjustable lie board including
17 a base plate on which is pivotably mounted a lie plate which is
18 angle and attitude adjustable relative to said base plate, an
19 angle readout device mounted on said base plate adjacent said lie
20 plate operative to permit reading of the angle of said lie plate
21 relative to said base plate, said adjustable lie board enabling
22 use of said representative golf club during the angle
23 determination section of the fitting process, with angle changes
24 being made via said adjustable lie board instead of through the
25 use of multiple test clubs with slightly different club head
26 angles.

27
28 9. The improved golf club fitting system of claim 8 further

1 comprising the steps of placing marking tape on the sole of the
2 club head of said representative golf club, having the player hit
3 at least one shot off of said lie plate of said adjustable lie
4 board, recording the position of the impact mark on said marking
5 tape via said hitting of at least one shot, adjusting the angle
6 of said lie plate relative to said base to bring the angle of said
7 lie plate into general alignment with the angle of the player's
8 swing and repeating said hitting, recording and adjusting steps
9 until the impact mark on said marking tape is generally centered
10 on the club sole in relation to the heel and toe of the club head
11 of said representative golf club.

12
13 **10.** The improved golf club fitting system of claim **1** wherein
14 said representative golf club is a 6-iron.

15
16 **11.** The improved golf club fitting system of claim **1** wherein
17 said representative golf club is a 7-iron.

1 **12.** An improved golf club fitting system for fitting a set
2 of golf clubs to a player comprising the steps:

3
4 measuring a player's physical dimensions at least including grip
5 strength of the player's hand;

6
7 selecting a representative golf club having a dead weight equal
8 to the total weight of the representative golf club, said
9 dead weight being directly proportional to the player's grip
10 strength, specifically that the dead weight of the golf club
11 is greater when the player's grip strength is greater and
12 vice versa;

13
14 recording the club length of the representative golf club;

15
16 determining the swing weight of the representative golf club;

17
18 computing a balance index (BI) for the representative golf club
19 by dividing the dead weight (DW) by the numerical value of
20 the swing weight (SW) ($DW/SW = BI$);

21
22 comparing said balance index (BI) determined for the
23 representative golf club to said dead weight of the
24 representative golf club to determine generally corresponding
25 balance index and dead weight values for at least some of the
26 other golf clubs in a set of golf clubs such that the system
27 user can generally match different iron and wood golf clubs
28 to the representative golf club thereby creating a generally

1 ideal matched set of golf clubs for the player;

2
3 providing an adjustable lie board including a base plate on which
4 is pivotably mounted a lie plate which is angle and attitude
5 adjustable relative to said base plate, an angle readout
6 device mounted on said base plate adjacent said lie plate
7 operative to permit reading of the angle of said lie plate
8 relative to said base plate, said adjustable lie board
9 enabling use of said representative golf club during the
10 angle determination section of the fitting process, with
11 angle changes being made via said adjustable lie board
12 instead of through the use of multiple test clubs with
13 slightly different club head angles;

14
15 placing marking tape on the sole of the club head of said
16 representative golf club;

17
18 having the player hit at least one shot off of said lie plate of
19 said adjustable lie board;

20
21 recording the position of the impact mark on said marking tape via
22 said hitting of at least one shot;

23
24 adjusting the angle of said lie plate relative to said base to
25 bring the angle of said lie plate into general alignment with
26 the angle of the player's swing; and

27
28 repeating said hitting, recording and adjusting steps until the

1 impact mark on said marking tape is generally centered on the
2 club sole in relation to the heel and toe of the club head of
3 said representative golf club.
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1 **13.** An improved golf club fitting system for fitting a set
2 of golf clubs to a player comprising the steps:

3
4 measuring a player's physical dimensions at least including grip
5 strength of the player's hand;

6
7 selecting a representative golf club having a dead weight equal
8 to the total weight of the representative golf club, said
9 dead weight being directly proportional to the player's grip
10 strength, specifically that the dead weight of the golf club
11 is greater when the player's grip strength is greater and
12 vice versa, said representative golf club comprising a test
13 golf club having a determined dead weight, swing weight and
14 balance, said determined dead weight, swing weight and
15 balance calculated via said determining step, said test golf
16 club having a club head including adjustable weighting means
17 and adjustable weight positioning means, said test golf club
18 further having shaft length adjustment means such that the
19 weight and balance of said club head of said test golf club
20 and the length of said shaft of said test golf club are
21 adjustable to fit the player's determined swing
22 characteristics;

23
24 providing a plurality of shaft extensions and a plurality of head
25 weights for said test golf club, said plurality of shaft
26 extensions adapted to releasably connect to the top end of
27 the test golf club and which are made in a series of
28 progressively lengthened units such as the one-inch extension

1 and the one and one-half inch extension, said head weights
2 adapted to be releasably mounted into the club head of the
3 test golf club, said head weights being in progressively
4 heavier units such as the $\frac{1}{4}$ ounce weight and the $\frac{1}{2}$ ounce
5 weight such that the precise weight and shaft length for said
6 test golf club can be set so that the player and fitter can
7 determine the best fitting club for the player and use the
8 resulting figures to fit the rest of the desired set;

9
10 computing a balance index (BI) for the representative golf club
11 by dividing the dead weight (DW) by the numerical value of
12 the swing weight (SW) ($DW/SW = BI$); and

13
14 comparing said balance index (BI) determined for the test golf
15 club to said dead weight of the test golf club to determine
16 generally corresponding balance index and dead weight values
17 for at least some of the other golf clubs in a set of golf
18 clubs such that the system user can generally match different
19 iron and wood golf clubs to the test golf club thereby
20 creating a generally ideal matched set of golf clubs for the
21 player.